EXTRA INFORMATION

11/16/09 (12)

Christine Joyce

From: Mary Michelman [msmichelman@comcast.net]
Sent: Monday, November 16, 2009 3:39 PM
To: Paulina Knibbe (comcast); Board of Selectmen
Cc: Steve Ledoux; Stephen Anderson; Doug Halley; Chris Allen; 'Matt Mostoller'; 'James Okun'
Subject: Manganese cleanup level @ WR Grace Superfund Site

Dear Acton Board of Selectmen,

Would the Town please submit comments on the recent request by WR Grace to raise the cleanup level for manganese from 300 ug/l, (the EPA Health Advisory level), to 722 ug/l, a higher, less protective level? Comments on the "Proposed Interim Groundwater Cleanup Level for Manganese" are due from the Town, Acton Water District and ACES by Friday, November 20, 2009.

FYI, I have attached the following two documents, in case they are helpful:

- A figure showing the manganese concentrations detected in the 12 background wells at the WR Grace Site.
- The Town's **January 2007** comments in response to WR Grace's 2006 request for changes to the cleanup levels. See comment #2f on page 4 for the Town's comments regarding manganese.

Background
In 2006, WR Grace submitted a proposal to EPA that select cleanup requirements at the WR Grace Superfund Site be either relaxed or eliminated. Amongst these was the request to change the cleanup requirement (IGCL), for manganese from the current 300 ug/l, (the EPA Health Advisory level), to 891 ug/l, the maximum concentration detected in background wells at the site. The Town's 2007 comments requested that the IGCL for manganese "not be increased above the current EPA health protective value of 0.300 mg/l." [0.300 mg/l is equivalent to 300 ug/l]

In February 2007, EPA requested additional information from WR Grace to assist them in making a decision about the requested changes to the cleanup levels. In response, WR Grace submitted the current document which provides an analysis of the manganese detections in 12 "background" wells at the site. This document proposes that the manganese cleanup level be changed to 722 ug/l, even though:

- 10 of the 12 background wells had detections of 331 ug/L or less of manganese.
- the manganese detections at the other two background wells (AR-07P and AR-34DBR) were determined by WR Grace's consultant to be statistical outliers. Concentrations from these two wells were approximately two and a half times the next highest detection.
- Geochemical data, (such as total organic carbon, dissolved oxygen, pH, and ORP) are not provided for any of the background wells. (These data could help determine the potential cause of high manganese levels.)
- Only a single data point for manganese is provided for AR-07P, (one of the background wells with a high manganese detection).
- The EPA Health Advisory level for manganese is 300 ug/L.
- The secondary drinking water standard for manganese is 50 ug/L due to black/brown colored water; black staining; and a bitter metallic taste.
- WR Grace is required per consent decree to return the aquifer to a fully usable condition.

Would the Town please consider requesting:

1. **Additional sampling of AR-07P** for both dissolved and total manganese.

2. **Testing for geochemical parameters**, (such as total organic carbon, dissolved oxygen, pH, and ORP) at AR-07P and AR-34DBR, (the two background wells with high manganese detections). Geochemical testing at the other 10 background wells, if appropriate, may also be helpful.

3. **Other additional information** about the two wells with high manganese detections—such as former land use in the

area.

4. **An analysis of manganese background levels** from the site, using the EPA statistical package Pro-UCL and **excluding the data from the two wells that are statistical outliers,** especially given the statement from EPA in the 2009 technical guide to the Pro-UCL software that the objective when calculating a site-specific background concentration is "to compute background statistics based upon the majority of the data set representing the dominant background population, and not to accommodate a few low probability outliers that may also be present in the background data set".

All of the information in #1-4 above should be provided before any decision is made on the request to increase the IGCL for manganese. Consistent with the Town's 2007 comments, would the Town also request:

5. Either
   a. **retention of the current EPA health advisory level of 300 ug/l** for the manganese cleanup level or
   b. the use of a **background concentration** for the manganese IGCL calculated using Pro-UCL and 10 of the 12 background wells, (**excluding the two statistical outliers**, AR-07P and AR-34DBR),
   c. or the use of a **median or average** value for manganese based on all 12 background wells.

I plan to come to tonight's, November 16, 2009 Board of Selectmen's meeting to answer any questions that you may have.

Thank you for your consideration.

Mary

Mary Michelman
ACES

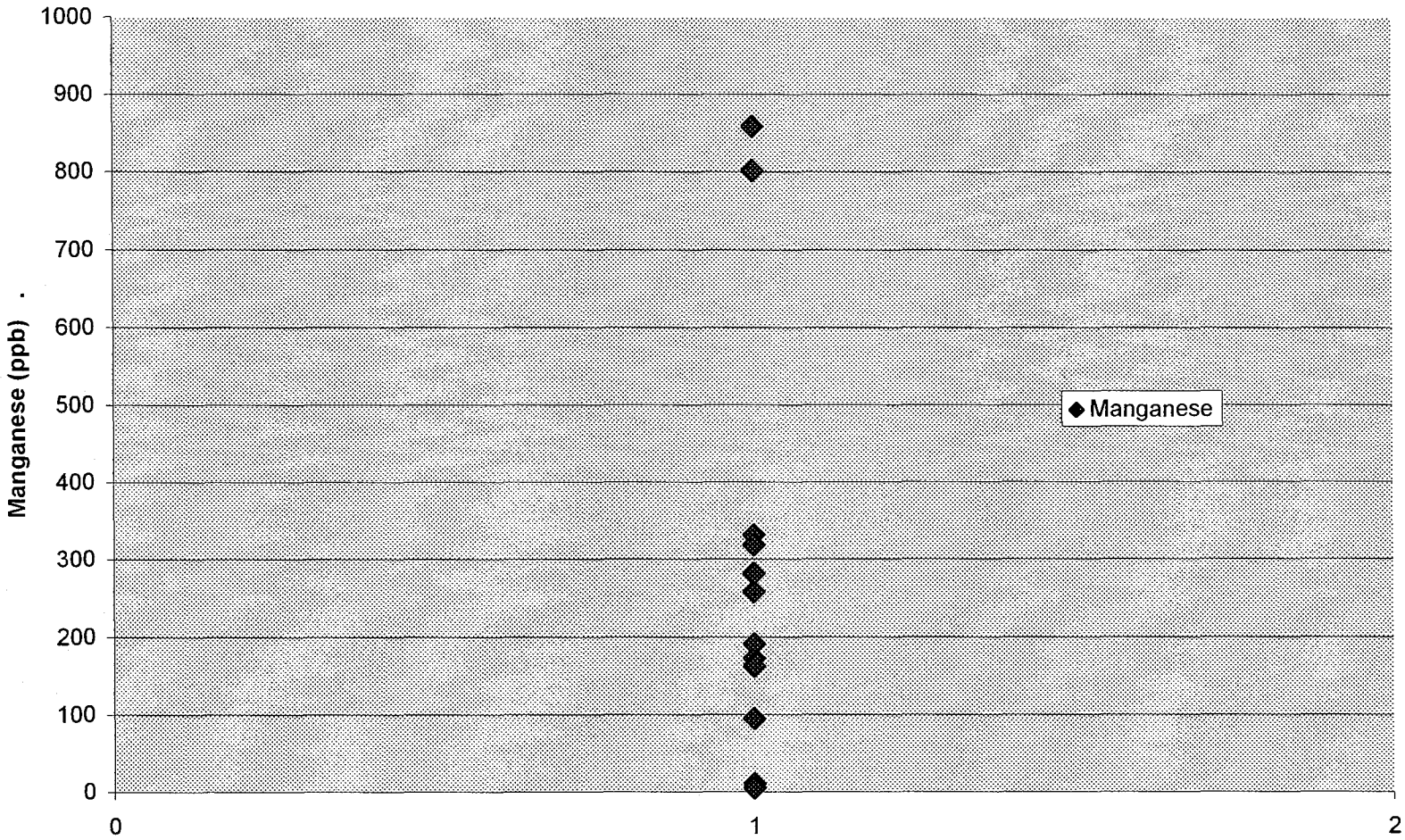

Figure 1. Average manganese concentration in parts per billion at 12 background wells at the WR Grace Site in Acton, MA. Data from Table 4-1 in the November 29, 2006 "Draft Evaluation of Interim Groundwater Cleanup Levels", by GeoTrans.

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Don P. Johnson
Town Manager

January 12, 2007

Derrick Golden
Remedial Project Manager
USEPA Region I
One Congress Street, Mail Code HBO
Boston, MA 02203-001

Dear Mr. Golden:

Attached with this letter please find the Town of Acton's comments on the W. R. Grace Interim Groundwater Cleanup Levels (IGCL).

Sincerely,

John Murray
Assistant Town Manager

MEMORANDUM

Date: January 2, 2007

To: Derrick Golden, USEPA [Golden.Derrick@epamail.epa.gov]
Sarah White, USEPA [White.Sarah@epamail.epa.gov];
Daniel Keefe, MADEP [Daniel.Keefe@state.ma.us]

From: Town of Acton

Cc: Don P. Johnson, Acton Town Manager [djohnson@acton-ma.gov] ;
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Doug Halley, Acton Health Department [dhalley@acton-ma.gov]

Subject: **Review Comments on "Evaluation of Interim Groundwater Cleanup Levels" (November 29, 2006), Operable Unit Three, W.R. Grace Superfund Site, Acton, MA**

Officials of the Town of Acton (the "Town") have reviewed of the November 29, 2006 "Evaluation of Interim Groundwater Cleanup Levels" ("IGCL") for the W. R. Grace Superfund Site, Acton, Massachusetts ("the Site"). On behalf of the Town's Board of Selectmen, we have prepared the following comments:

As stated in the IGCL report, "IGCLs were established for all chemicals of concern (COCs) identified in the Public Health Risk Assessment which were found to pose an unacceptable risk to either public health or the environment, or which were found to exceed an ARAR." The current IGCL evaluation report seeks to modify the IGCLs included in the 2005 Record of Decision. The Town's comments on the proposed changes are as follows:

1. **Organic Compounds**

Generally, the Town agrees with GeoTrans' recommendations for the modification of IGCLs for the two organic compounds, although not with the reasoning used to arrive at these recommendations.

a. Trichloroethene ("TCE")

GeoTrans asserts that off-site releases of TCE have affected Site groundwater quality. However, this does not negate the fact that releases of TCE have occurred on the Grace Site as a result of Grace's operations and that these Grace releases have affected groundwater quality at and from the Site. GeoTrans' claim of an off-site origin for TCE

detected (at concentrations greater than the IGCLs) south of Muskrat Pond is speculative, and no scientific support is offered in this document for this conclusion.

While the possibility of off-site sources should be taken into consideration in future planning and assessments, documentation of off-site releases needs to be both compelling and clearly presented. In any event, the possibility of off-Site releases of TCE should not be used as a basis to ignore on-Site sources of TCE.

b. Methyl-Tertiary-Butyl Ether ("MTBE")

Based on Table 2-1, there is either a stable or a downward trend in MTBE concentrations at the monitoring stations at the Site. Only one recent detection (February 2001 at AR-27S) exceeded the Massachusetts Health Guideline for MTBE of 70 ug/l. While it is possible that some of the MTBE is not attributable to Grace's operations, distinguishing between what is and what is not Grace MTBE is unlikely to be fruitful at this time. Although MTBE may pose problems for the future full use of the aquifer, currently the presence of MTBE does not pose as high a threat level as do other VOCs at the Site.

Overall, GeoTrans' request for future consideration regarding multiple sources of MTBE is reasonable.

2. Inorganic Compounds

The Town agrees with GeoTrans' assertion that "increased dissolution of naturally occurring minerals" may have occurred at the Site due to waste disposal activities at the Grace property. This is the mechanism that has likely caused arsenic and other inorganic constituents to dissolve in Site groundwater.

However, the Town does not agree that it is appropriate to assume that the presence of VOCs can reliably be used as an indicator of the possible presence of these dissolved inorganic minerals. Non-VOC containing wastes may also exert a considerable impact on the dissolution of minerals. While the presence of organic carbon in the waste affects the redox potential of the groundwater; VOCs do not need to be present for this effect to occur. This is the reason the Town has previously recommended the inclusion of Total Organic Carbon as an inorganic testing parameter.

Specific comments on the proposals for each of the inorganic IGCLs discussed in the report follow:

a. Antimony

Based on available information, antimony does not appear to be a groundwater constituent related to Grace's past disposal practices. GeoTrans' recommendation to eliminate it from the list of IGCL constituents appears to be reasonable at this time.

b. Beryllium

Based on available information, beryllium does not appear to be a groundwater constituent related to Grace's past disposal practices. GeoTrans' recommendation to eliminate it from the list of IGCL constituents appears to be reasonable at this time.

c. Lead

For certain groundwater samples collected in September 2000, the lead concentration results were so anomalously high that their legitimacy should be called into to question. If one disregards these results due to an apparent sampling or laboratory error, then the remaining evidence for lead contamination in groundwater is very limited.

Based on the other available information, lead does not appear to be a significant contaminant in Site groundwater at this time. GeoTrans' recommendation to remove it from the IGCL list is reasonable. However, before doing so, an additional round of sampling at locations where lead was previously detected should be taken to verify the assumption about the anomalous 9/2000 lead results.

d. Nickel

Historic nickel concentrations in samples from monitoring location OSA-16A appear to indicate the consistent reproducible presence of dissolved nickel at steadily increasing concentrations, this is a troubling trend. The Town recommends that additional investigation be conducted to assess whether the source of this nickel was abated during the remediation and if not, to identify whether further actions are warranted.

e. Chromium

In its presentation, GeoTrans refers to communications with the Multilevel Groundwater Monitoring System packer manufacturer which suggest that the manufacturer had acknowledged that the packers were capable of leaching chromium into groundwater samples. GeoTrans should be required to provide to EPA, DEP and the Stakeholders copies of all communications with the manufacturer on this subject.

In addition, Grace should be required to install a duplicate well which samples groundwater at approximately the same location and from the same hydrogeologic stratum where chromium was previously reported. Samples from the new well should be analyzed for chromium to confirm the the assertion that the chromium is not actually present in the native groundwater.

Assuming that the duplicate well sample contains no chromium above background concentrations, and assuming the confirming information from the manufacturer that the packers are the source of chromium contamination is credible , then the Town agrees with GeoTrans' recommendation for the chromium IGCL.

f. Manganese

A considerable body of scientific literature and regulatory assessments have been developed relative to manganese. Of direct relevance are the Massachusetts Groundwater Standards (314 CMR 6.00) and the Massachusetts Drinking Water Standards (310 CMR 22.00). The regulatory standard for manganese is 0.050 mg/l in each of these regulations. Neither of these standards is discussed in the GeoTrans report.

USEPA has issued a Health Advisory dated January, 2004 for manganese. In that health advisory USEPA recommends reducing manganese concentrations to below 0.050 mg/l. However, the advisory goes on to acknowledge that a level of 0.300 mg/l would be protective against possible neurological effects in children and other susceptible segments of the population.

The Town recommends that the IGCL for manganese be reduced to 0.050 mg/l (the DEP and EPA standard) and in any event that it not be increased above the current EPA health protective value of 0.300 mg/l.